

AMENDMENTS TO THE CLAIMS

The listing below of the claims presents in further amended form the claims as they were amended from the translation of the originally-filed German language text of the international application, and they are intended to replace all prior versions and listings of claims in the present application:

Listing of Claims:

Claim 1 (canceled)

Claim 2 (currently amended): ~~Method according to claim 1 wherein the bending moment (MB) of the longitudinal legs is minimized for the plate-link chain corresponding to the following formula in given boundary conditions:~~

A method for optimizing plate geometry of a plate of a plate-link chain for use in a variable speed drive unit of a belt-driven conical-pulley transmission, said method comprising the steps of:

providing an initial plate geometry for a plate that includes an opening for receiving pairs of rocker members that bear against sides of the opening, wherein the opening is bounded by spaced longitudinal legs that extend in a chain movement direction and spaced vertical legs that extend in a direction perpendicular to the chain movement direction;

determining a bending moment (MB) acting on the longitudinal legs of the plate when the plate is subjected to a predetermined applied longitudinal force that is applied at a predetermined lever arm distance relative to the longitudinal

leg from the following bending moment relationship based upon the following plate geometry variables:

$$MB = \frac{F * He}{k + 1} \cdot \left[1 - \frac{He}{L2} \right] \quad \text{with} \quad k = \frac{I2 * L1}{I1 * L2}, \text{ wherein}$$

F = applied longitudinal force introduced

He = lever arm of the applied force introduced F

$I1$ = ~~surface inertial factor~~ planar moment of inertia of the longitudinal leg (= leg height³*thickness/12)

$I2$ = ~~surface inertial factor~~ planar moment of inertia of the vertical leg (= leg width³*thickness/12)

$L1$ = overall length of the longitudinal leg

$L2$ = overall length of the vertical leg;

modifying respective ones of the plate geometry variables; and
calculating longitudinal leg bending moments for different plate longitudinal leg lengths and different longitudinal leg planar moments of inertia at the predetermined applied force and the predetermined applied force lever arm until a minimum longitudinal leg bending moment is achieved.

Claim 3 (currently amended): ~~Method according to claim 1, wherein the bending moment (MA) of the vertical legs is minimized for the plate-link chain corresponding to the following formula in given boundary conditions:~~

A method for optimizing plate geometry of a plate of a plate-link chain for use in a variable speed drive unit of a belt-driven conical-pulley transmission, said method comprising the steps of:

providing an initial plate geometry for a plate that includes an opening for receiving pairs of rocker members that bear against sides of the opening, wherein the opening is bounded by spaced longitudinal legs that extend in a chain movement direction and spaced vertical legs that extend in a direction perpendicular to the chain movement direction;

determining a bending moment (MA) acting on the vertical legs of the plate when the plate is subjected to a predetermined applied longitudinal force that is applied at a predetermined lever arm distance relative to the longitudinal legs from the following bending moment relationship based upon the following plate geometry variables:

$$MA = F * He * \left[1 - \frac{1}{k+1} \cdot \left(1 - \frac{He}{L2} \right) \right] \quad \text{with} \quad k = \frac{I2 * L1}{I1 * L2}, \text{ wherein}$$

F = applied longitudinal force introduced

He = lever arm of the applied force introduced F

$I1$ = ~~surface-inertial-factor~~ planar moment of inertia of the longitudinal leg (= leg height³*thickness/12)

$I2$ = ~~surface-inertial-factor~~ planar moment of inertia of the vertical leg (= leg width³*thickness/12)

$L1$ = overall length of the longitudinal leg

$L2$ = overall length of the vertical leg;

modifying respective ones of the plate geometry variables; and
calculating vertical leg bending moments for different plate vertical leg
lengths and different vertical leg planar moments of inertia at the predetermined
applied force and the predetermined applied force lever arm until a minimum
vertical leg bending moment is achieved.

Claim 4 (canceled)

Claim 5 (currently amended): ~~Plate according to claim 4, wherein the~~
~~bending moment (MB) of the longitudinal legs is minimal for the plate-link chain~~
~~corresponding to the following formula in given boundary conditions:~~

A plate for a plate-link chain for use in a variable speed drive unit of a belt-
driven conical-pulley transmission, said plate comprising:

spaced longitudinal legs that extend in a chain movement direction and
spaced vertical legs that extend in a direction perpendicular to the chain
movement direction;

an opening for receiving pairs of rocker members that bear against sides
of the opening, wherein the opening is bounded by the spaced longitudinal legs
and by the spaced vertical legs;

wherein a minimum bending moment (MB) acting on the longitudinal legs
of the plate when the plate is subjected to a predetermined applied longitudinal
force that is applied at a predetermined lever arm distance relative to the
longitudinal legs is determined from the following bending moment relationship

based upon the following plate geometry variables by selectively varying plate geometry variables until a minimum longitudinal leg bending moment is achieved:

$$MB = \frac{F * He}{k + 1} \bullet \left[1 - \frac{He}{L2} \right] \quad \text{with} \quad k = \frac{I2 * L1}{I1 * L2}, \text{ wherein}$$

F = applied longitudinal force introduced

He = lever arm of the applied force introduced F

$I1$ = ~~surface-inertial-factor~~ planar moment of inertia of the longitudinal leg (= leg height³*thickness/12)

$I2$ = ~~surface-inertial-factor~~ planar moment of inertia of the vertical leg (= leg width³*thickness/12)

$L1$ = overall length of the longitudinal leg

$L2$ = overall length of the vertical leg.

Claim 6 (currently amended): ~~Plate according to claim 4, wherein the bending moment (MA) of the vertical legs is minimal for the plate-link chain corresponding to the following formula in given boundary conditions:~~

A plate for a plate-link chain for use in a variable speed drive unit of a belt-driven conical-pulley transmission, said plate comprising:

spaced longitudinal legs that extend in a chain movement direction and spaced vertical legs that extend in a direction perpendicular to the chain movement direction;

an opening for receiving pairs of rocker members that bear against sides of the opening, wherein the opening is bounded by the spaced longitudinal legs and by the spaced vertical legs;

wherein a minimum bending moment (MA) acting on the vertical legs of the plate when the plate is subjected to a predetermined applied longitudinal force that is applied at a predetermined lever arm distance relative to the longitudinal legs is determined from the following bending moment relationship based upon the following plate geometry variables by selectively varying plate geometry variables until a minimum vertical leg bending moment is achieved:

$$MA = F * He * \left[1 - \frac{1}{k+1} \cdot \left(1 - \frac{He}{L2} \right) \right] \quad \text{with} \quad k = \frac{I2 * L1}{I1 * L2}, \text{ wherein}$$

F = applied longitudinal force introduced

He = lever arm of the applied force ~~introduced~~ F

$I1$ = ~~surface-inertial-factor~~ planar moment of inertia of the longitudinal leg (= leg height³*thickness/12)

$I2$ = ~~surface-inertial-factor~~ planar moment of inertia of the vertical leg (= leg width³*thickness/12)

$L1$ = overall length of the longitudinal leg

$L2$ = overall length of the vertical leg.

Claim 7 (currently amended): ~~Plate according to~~ A plate in accordance with claim 5, wherein $1 < k < 3.5$.

Claim 8 (new): A plate in accordance with claim 6, wherein $1 < k <$
3.5.